

What is claimed is:

1. A mobile station for performing a frequency control for synchronizing the frequency of an internal clock signal in said mobile station to the frequency of a clock signal in a base station, said mobile station comprising:

5 a plurality of frequency error measuring means each for measuring a frequency error between an internal clock signal and a clock signal of a specified base station;

a plurality of control voltage calculating means each associated with corresponding one of said plurality of frequency error measuring means for integrating a frequency error measured by the corresponding frequency error measuring means to produce a control voltage;

10 control voltage selecting means for selecting a single control voltage corresponding to a base station currently in communication with said mobile station from among control voltages calculated by said plurality of control voltage calculating means; and

15 clock signal generating means for generating said internal clock signal at a frequency in accordance with the control voltage selected by said control voltage selecting means.

2. The mobile station according to claim 1, further comprising:  
means for storing in a memory a set of a scramble code of each base station corresponding to a frequency error measured by each of said frequency error measuring means corresponding to said base station, and  
5 the single control voltage selected by said control voltage selecting means.

1004258-14901  
10

3. The mobile station according to claim 2, further comprising:  
means operative when said mobile station is turned on, returns from an out-of-coverage area, or hand over, for reading from said memory a frequency error and a control voltage corresponding to a scramble code of a base station to which said mobile station is newly connected for communication, when the scramble code is stored in said memory, to set the frequency error and the control voltage in a single control voltage calculating means, and for selecting said control voltage calculating means by said control voltage selecting means.

4. The mobile station according to claim 2, further comprising:  
means operative when said mobile station is turned on, returns from an out-of-coverage area, or hand over, for setting a frequency error equal to zero and a control voltage set at a center value in a single control voltage calculating means, when said memory does not store a scramble code of a base station to which said mobile station is newly connected for communication, and for selecting said control voltage calculating means by said control voltage selecting means.

5. The mobile station according to claim 1, further comprising:  
means for switching a control voltage selected by said control voltage selecting means when said mobile station hand over.

6. The mobile station according to claim 5, further comprising:  
means for setting a control voltage calculated by control voltage calculating means which had supplied a control voltage selected

before a hand-over, in control voltage calculating means which supplies a  
5 control voltage selected after the hand-over.

7. The mobile station according to claim 5, further comprising:  
means for setting a central control voltage and a frequency  
error equal to zero in control voltage calculating means which supplies a  
control voltage selected after the hand-over when a base station after the  
5 hand-over has not been assigned to any frequency error control means or  
voltage control means before the hand-over.

8. A mobile station for performing a frequency control for  
synchronizing the frequency of an internal clock signal in said mobile  
station to the frequency of a clock signal in a base station, said mobile  
station comprising:

5 a plurality of frequency error measuring means each for  
measuring a frequency error between an internal clock signal and a clock  
signal of a specified base station;

frequency error selecting means for selecting a single  
frequency error corresponding to a base station currently in communication  
10 with said mobile station from among frequency errors measured by said  
plurality of frequency error measuring means; .

a plurality of control voltage calculating means for integrating  
a frequency error selected by said frequency error selecting means to  
produce a control voltage; and

15 clock signal generating means for generating said internal  
clock signal at a frequency in accordance with said control voltage.

9. The mobile station according to claim 8, further comprising:  
means for switching a frequency error selected by said  
frequency error selecting means when said mobile station hand over.

10. The mobile station according to claim 9, further comprising:  
means for setting a frequency error equal to zero in control  
voltage calculating means which supplies a control voltage selected after the  
hand-over, when a base station after the hand over has not been assigned to  
any frequency error control means before the hand-over.